

AMENDMENTS TO THE CLAIMS

Listing of Claims

1. (currently amended) A sheet molding compound comprising a product of electron beam irradiation of a mixture containing:

at least one unsaturated oligomer resin; and

at least one unsaturated monomer; wherein said compound is essentially devoid of thickening agents, and wherein said compound is non-reversibly crosslinked within a predetermined amount to provide a stable, partially crosslinked compound, and wherein the viscosity of said partially crosslinked compound is increased and further wherein the partially crosslinked compound is capable of being further crosslinked.

2. (previously presented) A method of making a thickened compound comprising:

preparing a composition consisting essentially of at least one unsaturated oligomer resin, and at least one unsaturated monomer; and

non-reversibly, partially crosslinking said composition a predetermined amount by irradiation to provide a stable, partially crosslinked composition, wherein the viscosity of said composition is increased and further wherein the partially crosslinked composition is capable of being further crosslinked.

3. (previously presented) A method of non-reversibly crosslinking a compound comprising:

preparing a composition comprising an amount of unsaturated oligomer resin, an amount of unsaturated monomer, and an amount of a free radical initiator; and

irradiating the composition with high-energy electrons, wherein a plurality of non-reversible crosslinks are formed, and wherein formation of said crosslinks is dependent upon an absorbed dose and a dose rate of said high-energy electrons and the dose and dose rate are selected to provide a non-reversibly, partially crosslinked compound.

4. (previously presented) A method of preparing a compound which is suitable for use in compression molding operations comprising:

preparing a thermoset mixture consisting essentially of an unsaturated oligomer resin, an unsaturated monomer, and a free radical initiator;

forming a partially crosslinked mixture by selectively irradiating at least a portion of said thermoset mixture to a desired increased viscosity;

placing said partially crosslinked mixture into a mold; and

heating said mold to a temperature sufficient to convert said partially crosslinked mixture to a cured and a molded product.

5. (original) The compound of claim 1 further comprising materials selected from the group consisting of free radical initiators,

polymerization inhibitors, wetting agents, antifoam agents, fillers, fibrous reinforcing materials, pigments, and mold release agents.

6. (previously presented) The compound of claim 1, wherein said unsaturated oligomer resin is an unsaturated polyester resin.

7. (original) The compound of claim 1, wherein said unsaturated monomer is styrene.

8. (previously presented) The compound of claim 1, wherein the compound further comprises an organic peroxide.

9. (original) The compound of claim 1, wherein said compound is non-reversibly crosslinked by selective irradiation from an electron beam of high-energy electrons.

10. (original) The method of claim 2, wherein said composition further comprises materials selected from the group consisting of free radical initiators, polymerization inhibitors, wetting agents, antifoam agents, fillers, fibrous reinforcing materials, pigments, and mold release agents.

11. (previously presented) The method of claim 2, wherein said unsaturated oligomer resin is an unsaturated polyester resin.

12. (original) The method of claim 2, wherein said unsaturated monomer is styrene.

13. (previously presented) The method of claim 10, wherein said free radical initiator is an organic peroxide.

14. (original) The method of claim 2, wherein said composition is non-reversibly crosslinked by selective irradiation from an electron beam of high-energy electrons, with the degree of crosslinking controlled by the electron energy, radiation dose and dose rate.

15. (original) The compound of claim 1, wherein the amount of crosslinking forms a gel material, having a viscosity to allow it to be handled for a subsequent molding process.

16. (original) The compound of claim 1, further comprising at least one reinforcing material, wherein the amount of crosslinking inhibits flow of said reinforcing materials when the compound is subjected to elevated temperatures.

17-18. (cancelled)

19. (previously presented) A molding compound consisting essentially of:

at least one unsaturated oligomer resin;

at least one unsaturated monomer; and

optionally, at least one free radical initiator;

wherein said compound is non-reversibly crosslinked by irradiation within a predetermined amount to provide a stable, partially crosslinked compound, and wherein the partially crosslinked compound is capable of being further crosslinked.

20. (previously presented) The molding compound of claim 19, wherein the optional free radical initiator is present and comprises an organic peroxide.